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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: MOSTAFAZADEH

Attorney Docket No.:
NSC1P194/P04836

Application No.: 09/698,736

Examiner: THAI, L.C.

Filed: October 26, 2000

Group: 2811

Title: CHIP SCALE PIN ARRAY

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail to: Commissioner for Patents, Washington, DC 20231 on July 11, 2002.

Signed: 

Tara Hayden

AMENDMENT A

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir or Madame:

In response to the Office Action dated April 11, 2002, a response to which is due July 11, 2002 please enter the following amendments and consider the following remarks:

IN THE CLAIMS:

Please **REWRITE** claim 11, 12, 14, and 18-20 as follows:

11. (Once Amended) A method for packaging integrated circuits, comprising:
providing a lead frame of a conductive material with an array of lead posts that are equally spaced apart and a connecting sheet connecting each of the lead posts;
attaching a plurality of first dice to the lead frame, wherein each first die is electrically and mechanically connected to a plurality of lead posts within the array of lead posts, and wherein a conductive side of each first die faces the lead posts; and
encapsulating the plurality of dice with an encapsulating material.
12. (Once Amended) The method, as recited in claim 11, further comprising removing at least part of the connecting sheet to electrically isolate each of the lead posts from each other.

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14. (Once Amended) The method, as recited in claim 13, wherein attaching the plurality of first dice to the lead frame comprises placing a conductive epoxy between conductive pads on the plurality of dice and each of the lead posts.

18. (Once Amended) The method, as recited in claim 17, wherein the conductive side of a die of the plurality of dice comprises a plurality of spaced apart conductive pads, wherein the conductive epoxy electrically and mechanically connects each conductive pad to one of the lead posts.

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19. (Once Amended) The method, as recited in claim 18, wherein the placing the conductive epoxy comprises:
placing the conductive epoxy on an upper surface of each of the lead posts; and
placing a plurality of dice so that each conductive pad is placed into conductive epoxy on an upper surface of a lead post.

20. (Once Amended) The method, as recited in claim 13, further comprising:
attaching a plurality of second dice to the plurality of first dice, wherein each second die has a conductive side and a side opposite the conductive side, wherein the side opposite the conductive side of each second die is connected to a side opposite the conductive side of a first die, wherein each second die has a plurality of conductive pads on the conductive side of the second die; and
wirebonding conductive pads of each second die to lead posts of the array of lead posts of the lead frame, wherein encapsulating the plurality of first dice encapsulates the plurality of second dice.

Please **ADD** the following new claims:

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-- 21. (Added Claim) A method as recited in claim 11 wherein at least three die are connected to lead posts within the array of lead posts.

22. (Added Claim) A method as recited in claim 11 wherein the array of lead posts is at least ten by ten in size. --

REMARKS

In the Office Action, the Examiner rejected claims 11-14 under 35 U.S.C. § 103(a) as being unpatentable over Shinohara (U.S. Patent No. 6,358,778) in view of Glenn (U.S. Patent No. 6,247,229), claims 15-19 under 35 U.S.C. § 103(a) as being unpatentable over Shinohara in view of Glenn, and further in view of Nakashima et al. (U.S. Patent No. 5,075,760), and claim 20 under 35 U.S.C. § 103(a) as being unpatentable over Shinohara in view of Glenn and further in view of Wang et al. (U.S. Patent No. 6,258,626). Claim 20 is also rejected under 35 U.S.C. § 103(a) as being unpatentable over Shinohara in view of Glenn and further in view of Tamaki et al. (U.S. Patent No. 6,157,080). The rejections are fully traversed below. Reconsideration of the application is respectfully requested based on the following remarks.

Claims 11, 12, 14, and 18-20 have been amended to further clarify the subject matter regarded as the invention. New claims 21-22 have been added. Claims 11-22 are now pending in this application.

REJECTION OF CLAIMS 11-20 UNDER 35 U.S.C. §103

Independent claim 1 of the present invention requires providing an array of lead posts that are equally spaced apart and attaching a plurality of dice within the array. This means that the array must be large enough so that more than one die can be placed within the array. See figures 7-9, 14 and 15.

In contrast, Shinohara and Glenn only teach sets of lead posts large enough for attachment to a single die. Shinohara and Glenn exemplify the traditional techniques of creating separated sets of lead posts that can each be attached to only one die. See figures 4A-C of Shinohara and figure 12 of Glenn. Therefore, Shinohara, Glenn, Nakashima et al., Wang et al., and Tamaki et al., alone or in any combination, do not teach or suggest an array of lead posts that are equally spaced apart and upon which can be attached more than one die. Therefore, it is submitted that claim 11 is patentably distinct from the cited references.

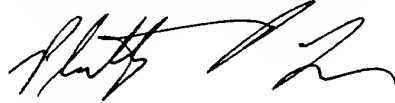
It is submitted that dependent claims 12-22 are also patentably distinct from Shinohara, Glenn, Nakashima et al., Wang et al., and Tamaki et al. for at least the same reasons as those recited above for their corresponding independent claims. These dependent claims further recite additional limitations that further distinguish these dependent claims from the cited references. Thus, it is respectfully requested that the Examiner withdraw the rejection of claims 11-20 under 35 U.S.C § 103(a).

SUMMARY

It is respectfully submitted that all pending claims are allowable and that this case is now in condition for allowance. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

If any fees are due in connection with the filing of this Amendment, the Commissioner is authorized to deduct such fees from the undersigned's Deposit Account No. 50-0388 (Order No. NSC1P194).

Respectfully submitted,
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